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THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Fernando C. Vidaurri, et al.

Serial No.: 10/609,087

Filed: June 27, 2005

For: METHOD TO DECREASE
CORROSIVENESS OF
REACTANTS IN POLY
(ARYLENE SULFIDE) POLYMER
PRODUCTION

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Group Art Unit: 1712

Examiner: Buttner, David J.

Atty. Docket: CPCM:0002-1/FLE/RAR
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February 21, 2006

Date

Michael G. Fletcher

Sir:

REPLY BRIEF PURSUANT TO 37 C.F.R. §§ 41.41

This Reply Brief is being filed in response to the Examiner's Answer mailed on December 21, 2005. This Reply Brief addresses the Examiner's continuing pattern of stretching the teachings of the prior art beyond their reasonable limits in order to reach the subject matter taught and claimed by Appellants in the present patent application. In the interest of brevity, Appellants will attempt to avoid repetition in this Reply. Therefore, Appellants respectfully ask that the Board carefully consider the arguments set forth in the previously-filed Appeal Brief.

Exclusion of Lithium Halide

The Examiner rejected claims 68 and 71 under 35 U.S.C. § 112 as failing to comply with the written description requirement because their subject matter expressly excludes lithium halide. The Examiner asserted incorrectly that “the specification does not provide a basis for exclusion of lithium halide.” *See* Answer, page 3. Apparently, the Examiner contended that there must be word-for-word literal support in the written description to support a negative limitation in a claim. *See* Answer, pages 3 and 7. However, Appellants respectfully remind the Board that *word-for-word literal* support is *not* required. *See, e.g.*, M.P.E.P. § 2173.05(j) p. 2100-233 (Rev. 3, August 2005) (citing *Ex parte Parks*, 30 U.S.P.Q.2d 1234, 1236 (Bd. Pat. App. & Inter. 1993).

For example, “[i]f alternative elements are positively recited in a specification they may be explicitly excluded in the claims.” M.P.E.P. § 2173.05(j) (emphasis added). Here, the present written description states that molecular-weight control agents (such as lithium halide) *may* be added to the polymerization. *See* Application, page 8, lines 17-21. Of these molecular weight control agents, lithium halide is listed as an *alternative*. *See id.*, at page 8, line 19 – page 9, line 7. Therefore, the express exclusion of lithium halide in claims 68 and 71 is entirely appropriate.

Further, the Examiner maintained the mistaken contention that the present specification specifically calls for inclusion of lithium halide. *See, e.g.*, Final Office Action, page 2; Answer, page 3 (citing Application, page 8, line 20). To the contrary, as clear, ironically, from the portion of the current application cited by the Examiner, the

present specification plainly lists lithium halide as an *optional* (and *alternative*) component of the polymerization. *See* Application, page 8, lines 17-21.

Furthermore, the Examiner's reliance on *Ex parte Grasselli* is misplaced. *See* Answer, page 7 (citing *Ex parte Grasselli*, 231 U.S.P.Q. 393 (Bd. App. 1983)). The Examiner cited *Ex parte Grasselli* for the proposition that "[n]egative limitations recited in the claims which did not appear in the specification as filed, introduce new concepts." However, in *Ex parte Grasselli*, unlike the present case, no support existed in the written description for the claimed negative limitations. *See Ex parte Grasselli*, 231 U.S.P.Q. at 394. As explained in the Manual of Patent Examining Procedure, the "mere absence of a positive recitation is not basis for an exclusion." M.P.E.P. § 2173.05(j). In contrast, here, as discussed in the previously-submitted Appeal Brief, the present specification states that the lithium halide or other molecular weight agents *can* be added to the reaction mixture before or during polymerization. *See* Application, page 8, line 17 – page 9, line 7; Appeal Brief, pages 8-9. It should be noted that the present specification then subsequently provides examples that do *not* incorporate lithium halide. *See* Application, page 12, line 15 – page 18, line 17.

Lastly, Appellants note that while some older courts were critical of negative limitations, the "current view of the courts is that there is nothing inherently ambiguous or uncertain about a negative limitation." *See* M.P.E.P. § 2173.05(j), (emphasis added). Indeed, as long as the present specification, as filed, clearly conveys that the instant inventors had possession of the claimed exclusion of lithium halide, as is the case here,

the written description requirement is satisfied. *See id.* Appellants have repeatedly explained and pointed to this plain support in the specification for the claimed exclusion of lithium halide. *See, e.g.,* Response to Office Action Mailed June 20, page 8; Appeal Brief, pages 8-9.

SMAB Solution and Contact with Sulfur Source

The references cited by the Examiner are absolutely devoid of reacting an aqueous metal hydroxide with a polar organic compound to form a *solution* (i.e., containing alkali metal aminoalkanoate or SMAB), and then contacting a sulfur source with that solution, as generally recited in the present independent claims. Instead, the cited references (Senga and Campbell) form and isolate SMAB for addition as a feedstock to a polymerization process.

For example, the Senga reference teaches that solid product (alkali metal aminoalkanoate) is removed from solution and subsequently “used in the form of an *anhydride, a hydrate or an aqueous solution*, like the sodium sulfide [feedstock]” in the preparation of polyarylene sulfide polymer (i.e., PPS). *See* Senga, col. 2, line 34 – col. 3, line 12 (emphasis added). Senga treats the alkali metal aminoalkanoate, sodium sulfide, and lithium halide equally as feedstocks that are added in any order to a commercial polymerization process. *See* col. 2, line 34 – col. 3, line 12; col. 6, lines 18-24.

The Campbell reference, like Senga, also teaches the separate production of a solid alkali metal aminoalkanoate. *See* Campbell, col. 1, lines 39-55; col. 2, lines 21-40 and 45-49; col. 5, lines 53-59; col. 6, lines 14-20. This solid aminoalkanoate is added with the other feedstocks *in any order* to a subsequent PPS polymerization. *See id.* The Campbell solution of the reacted sodium hydroxide (NaOH) and NMP is not contacted with a sulfur source, contrary to instant claims. *See id.*

In support of the rejections under 35 U.S.C. § 102, the Examiner contended that the Senga and Campbell references isolate their SMAB only “to perform an elemental analysis to confirm the identity of the product and its yield.” *See*, Answer, page 7. The Examiner posits that neither reference requires SMAB “to be isolated to a solid prior to contact with the sulfur source.” *See id.* To sustain this untenable position, the Examiner noted that the SMAB of the Senga reference “can be used in the form of an *aqueous* solution.” *See* Answer, page 7 (emphasis added). However, the use of a SMAB aqueous solution, as disclosed in Senga, *contradicts* the Examiner’s position and the instant claims.

Indeed, the presently-claimed SMAB solution is not an *aqueous* solution, as taught by Senga. To be sure, the low-moisture intermediate SMAB solution in solvent (e.g., NMP) of the present claims (i.e., *low-moisture* solution to avoid corrosive effects associated with the presence of water) would not be labeled as an “aqueous” solution by one of ordinary skill in the art. In addition, those of ordinary skill in the art also would

not label the presently-claimed SMAB solution as a “hydrate” (a solid) or “anhydride,” the other SMAB forms employed in the cited art. *See, e.g.*, Appeal Brief, pages 11-13, 15, and 16.

Moreover, as discussed in the Appeal Brief, Appellants stress that employment of the solvent N-methyl-2-pyrrolidone (NMP) in *both* the process of producing alkali metal aminoalkanoate and in the subsequent polymerization process does not indicate that the alkali metal aminoalkanoate would remain in solution as a feedstock of the polymerization process. *See* Final Office Action, page 3; Senga, col. 6, lines 7-18. The fact that a supplier and a customer utilize the same solvent in their respective processes does not mean that the supplier will provide the product to the customer in solution in that solvent.

Furthermore, even if the alkali metal aminoalkanoate (e.g., in Campbell or Senga) remained in *solution* in the NMP for addition to a subsequent polymerization, Campbell or Senga do not teach that this *solution* would be contacted with the sulfur source, as claimed. *See, e.g.*, Campbell, col. 1, lines 39-55; col. 2, lines 21-40 and 45-49; col. 5, lines 53-59; col. 6, lines 14-20. Instead, again, the solution would be added in any order to the polymerization with respect to the other feedstocks. *See id.* Appellants note that an unwitting disclosure which is accidental, unintentional, and unappreciated does not anticipate the claims. *See Schering Corp. v. Geneva Pharm., Inc.*, 339 F.3d 1373 (Fed.

Cir. 2003); *Eibel Process Co. v. Minnesota & Ont. Paper Co.*, 261 U.S. 45 (1923);
Tilghman v. Proctor, 102 U.S. 707, 26 L.Ed. 279 (1880).

Same Vessel

The Examiner has not provided a scintilla of objective evidence to support the assertion that it is obvious to form the SMAB and the PPS in the same vessel. Instead, the Examiner put forth subjective and conclusory statements regarding the total cost of the manufacture. *See, e.g.*, Answer, page 9. It should be noted that Appellants believe the general preference in the art is to form the SMAB and PPS in *separate* vessels.

PPS Metal Concentrations

Moreover, the Examiner has not met his burden in establishing that the presently-claimed metal concentrations *must* be present in the PPS of Senga and Campbell. To establish inherency, the Examiner must show that the claimed metal concentrations are *necessarily present* in the PPS of the cited art. Indeed, the Examiner must do more than merely assert that the process of the cited references “uses the same ingredients, temperatures, etc., as appellant.” *See* Answer, page 9.

In other words, even if the cited references employed the process features recited in the present claims, the PPS metal concentrations could be much higher than those presently-recited. For example, if Senga employed a carbon steel vessel in its process, the PPS metal concentrations would be much greater than those presently claimed.

Moreover, in general, both Senga and Campbell clearly do not consider issues of metallurgy, corrosion, and PPS metal contamination associated with use of sodium hydroxide and the production of alkali metal aminoalkanoate in a PPS polymerization. In sum, the Examiner has failed to meet his burden in establishing inherency.

Operating Pressure

The Examiner acknowledged that Campbell does not report the pressure range recited in claim 49. However, the Examiner then posited that because “Campbell does explicitly report the dehydration pressure in earlier steps to substantially atmospheric,” that “[w]ithout further guidance, one would *assume* similar pressures would be used in the second dehydration.” *See Answer*, page 8 (emphasis added). However, the Examiner’s assumptions are not an appropriate basis for a rejection under § 102 or § 103. Plainly, the reference does not disclose the pressure range, as recited in claim 49, that might support a rejection under § 102 or § 103. Therefore, Appellants strongly believe claim 49 to be patentable over the cited art. Further, Appellants note that the Examiner did *not* assert *inherency* to support the rejections. In addition, the Examiner did *not* put forth an *obvious* argument under § 103. In sum, with regard to dependent claim 49, Appellants are left with the Examiner’s assumption without a legal basis to address.

Conclusion

Based upon the above points of clarification in conjunction with the arguments made in the previously filed Appeal Brief, Appellant believes that the claims are clearly

allowable over the cited art. The Examiner's rejections, therefore, cannot stand.

Appellant respectfully requests that the Board withdraw the outstanding rejections and pass the present application to allowance.

General Authorization for Extensions of Time

In accordance with 37 C.F.R. § 1.136, Appellant hereby provides a general authorization to treat this and any future reply requiring an extension of time as incorporating a request thereof. Furthermore, Appellant authorizes the Commissioner to charge the appropriate fee for any extension of time to Deposit Account No. 06-1315; Order No. CPCM:0002-1/FLE (33776US02).

Respectfully submitted,

Date: February 21, 2006



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